Generate Collection

L4: Entry 1 of 3 File: USPT May 14, 1996

US-PAT-NO: 5517641
DOCUMENT-IDENTIFIER: US 5517641 A

TITLE: Restartable method to reorganize DB2 tablespace records by determining new physical positions for the records prior to moving using a non sorting technic

DATE-ISSUED: May 14, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Barry; Richard E.	Houston	TX	N/A	N/A
ALeisa; Eisa A.	Houston	TX	N/A	N/A

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
CDB Software, Inc.	Houston	TX	N/A	N/A	02

APPL-NO: 8/ 163091
DATE FILED: December 7, 1993

PARENT-CASE:
SPECIFICATION This is a continuation-in-part of application Ser. No. 07/889,454, filed May 27, 1992 now U.S. Pat. No. 5,408,654.

INT-CL: [6] G06F 7/24, G06F 17/30
US-CL-ISSUED: 395/600; 364/251.6, 364/282.1, 364/283.4, 364/DIG.1
US-CL-CURRENT: 707/101
FIELD-OF-SEARCH: 395/600, 395/425, 364/DIG.1, 364/DIG.2, 364/251.6, 364/283.4, 364/282.1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4679139	July 1987	durbin	395/425
☐	4890226	December 1989	Itoh	395/425
☐	5034914	July 1991	Osterlund	395/425
☐	5204958	April 1993	Cheng et al.	395/600
☐	5222235	June 1993	Hentz et al.	395/600
☐	5257362	October 1993	Menon	395/425
☐	5274805	December 1993	Ferguson et al.	395/600

OTHER PUBLICATIONS

Hauser et al. "DB2 2.3 REORG Tablespace Performance", DB Journal, Aug. 1992 pp. 24-29.

ART-UNIT: 237
PRIMARY-EXAMINER: Black; Thomas G.
ASSISTANT-EXAMINER: Choules; Jack M.

ATTY-AGENT-FIRM: Pravel, Hew[illegible], Kimball & Krieger

ABSTRACT:

An improved method to dramatically reduce the time required to reorganize DB2 tablespaces and index files by not utilizing conventional sort techniques. Viewing access is allowed during the reorganization process by setting the files to read only status. The process is basically non-destructive, allowing a prompt return to the original state, and is checkpointed, allowing restarting at selected intervals. Briefly, the original table and indices are considered as A files and read into memory. New row IDs or RIDs are developed using a non-sorting technique so that the proper order of the data is developed. After the new RIDs have been developed, both the clustering index and the row data are read out of memory and written to a new table and clustering index files in the proper order as B files. Then any remaining non-clustering indices are reorganized using non-sorting techniques in a similar fashion.

23 Claims, 47 Drawing figures

Generate Collection

L5: Entry 1 of 3 File: USPT May 26, 1998

US-PAT-NO: 5758357
DOCUMENT-IDENTIFIER: US 5758357 A

TITLE: Fast DB2 tablespace reorganization method that is restartable after interruption of the process

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Barry; Richard E.	Houston	TX	N/A	N/A
Aleisa; Eisa A.	Houston	TX	N/A	N/A

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
DBC Software, Inc.	Houston	TX	N/A	N/A	02

APPL-NO: 8/ 588862
DATE FILED: January 19, 1996

PARENT-CASE:
This is a division of application Ser. No. 08/163,091 filed Dec. 7, 1993 now U.S. Pat. No. 5,517,641, which was a continuation in part of application Ser. No. 07/889,454 filed May 27, 1992 now U.S. Pat. No. 5,408,654.

INT-CL: [6] G06F 17/30
US-CL-ISSUED: 707/202; 707/101
US-CL-CURRENT: 707/202; 707/101
FIELD-OF-SEARCH: 395/611, 395/612, 395/616, 395/618, 395/617, 395/621

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4679139	July 1987	Durbin	395/601
☐	4890226	December 1989	Itoh	395/417
☐	5034914	July 1991	Osterlund	395/872
☐	5121493	June 1992	Ferguson	395/607
☐	5204958	April 1993	Cheng	395/613
☐	5222235	June 1993	Hintz	395/612
☐	5257362	October 1993	Menon	395/441
☐	5274805	December 1993	Ferguson	395/607

OTHER PUBLICATIONS

Walker, H., Introduction to Computing and Computer Science with Pascal, pp. 246-247, Jan. 1986.
Hauser et al., "DB2 2.3 Reorg Tablespace Performance," DB Journal, Aug. 1992, pp. 24-29.

IBM DB2 Utilities Guide, Rec[redacted] Chap, pp. 103-114.
IBM DB2 Command and Utility Reference, pp. 266-272, Reorg Utility.
Platinum, Put User Guide, pp. 4-1 to 4-10, 1992.

ART-UNIT: 237
PRIMARY-EXAMINER: Black; Thomas G.
ASSISTANT-EXAMINER: Choules; Jack M.
ATTY-AGENT-FIRM: Pravel, Hewitt, Kimball & Krieger

ABSTRACT:

An improved method to dramatically reduce the time required to reorganize DB2 tablespaces and index files by not utilizing conventional sort techniques. Viewing access is allowed during the reorganization process by setting the files to read only status. The process is basically non-destructive, allowing a prompt return to the original state, and is checkpointed, allowing restarting at selected intervals. Briefly, the original table and indices are considered as A files and read into memory. New row IDs or RIDs are developed using a non-sorting technique so that the proper order of the data is developed. After the new RIDs have been developed, both the clustering index and the row data are read out of memory and written to a new table and clustering index files in the proper order as B files. All of the table files are then stopped to allow exclusive access. Next, a series of AMS statements are built to do the renaming operations. Specifically, a series of statements are built to rename all of the A files to X files, to rename all B files to A files and then to delete all of the X files. Then any remaining non-clustering indices are reorganized using non-sorting techniques and renamed in a similar fashion.

6 Claims, 47 Drawing figures

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Generate Collection

L1: Entry 1 of 2 File: USPT Dec 12, 2000

US-PAT-NO: 6161109
DOCUMENT-IDENTIFIER: US 6161109 A

TITLE: Accumulating changes in a database management system by copying the data object to the image copy if the data object identifier of the data object is greater than the image identifier of the image copy

DATE-ISSUED: December 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Matamoros; Deborah A.	San Jose	CA	N/A	N/A
Ruddy; James Alan	Gilroy	CA	N/A	N/A

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
International Business Machines Corporation	Armonk	NY	N/A	N/A	02

APPL-NO: 9/ 061589
DATE FILED: April 16, 1998

INT-CL: [7] G06F 17/00
US-CL-ISSUED: 707/203; 707/101, 707/102
US-CL-CURRENT: 707/203; 707/101, 707/102
FIELD-OF-SEARCH: 707/1-206

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5043871	August 1991	Nishigaki et al.	N/A
☐	5151987	September 1992	Abraham et al.	395/575
☐	5455944	October 1995	Haderle et al.	N/A
☐	5455946	October 1995	Mohan et al.	N/A
☐	5548750	August 1996	Larsson et al.	N/A
☐	5553279	September 1996	Goldring	N/A
☐	5559991	September 1996	Kanfi	N/A
☐	5594900	January 1997	Cohn et al.	N/A
☐	5642496	June 1997	Kanfi	N/A
☐	5768582	June 1998	Korenshtein	707/203
☐	5799322	August 1998	Mosher, Jr.	707/201
☐	5864849	January 1999	Bohannon et al.	707/7
☐	5900000	May 1999	Korenshtein	707/202
☐	5909689	June 1999	Van Ryzin	707/202

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
991022	August 1961	GBX	

OTHER PUBLICATIONS

Nunamaker et al., "Object databases for SGML document management" Abstract, System Sciences, Proceedings of the Thirtieth Hawaii International Conference, 1997.
Nielson et al., "Digital object identifiers and their role in the implementation of electronic publishing" Abstract, Socioeconomic Dimensions of Electronic Publishing Workshop, Proceedings, Apr. 1998.
Benevento et al., "Consistency checking in complex object database schemata with integrity constraints" Abstract, Knowledge and Data Engineering, IEEE Transactions, Aug. 1998.
R.A. Crus, et al., "Incremental Data Base Log Image Copy", IBM Technical Disclosure Bulletin, vol. 25, No. 7B, pp. 3730-3732, Dec. 1982.
R.A. Crus, "Data Recovery in IBM Database 2", IBM Systems Journal, vol. 23, No. 2, pp. 178-188, 1984.
"Restoring Data From DASD Volumes Having Hardware Errors", IBM Technical Disclosure Bulletin, vol. 31, No. 7, pp. 313-317, Dec. 1988.

ART-UNIT: 271
PRIMARY-EXAMINER: Black; Thomas G.
ASSISTANT-EXAMINER: Jung; David
ATTY-AGENT-FIRM: Pretty, Schroeder & Poplawski, P.C.

ABSTRACT:

A method, apparatus, and article of manufacture for a computer implemented image copying system for identifying modifications in a database in a computer. The database contains data objects and is stored on a primary data storage device connected to the computer. A data object identifier is generated for each data object as the data object is modified. An image identifier is generated for an image copy of the database when the image copy is updated, wherein the image copy is stored on a secondary data storage device. When one or more data objects are to be copied from the primary data storage device to the secondary data storage device, the data objects to be copied are determined by comparing the data object identifier of each data object to the image identifier.

21 Claims, 5 Drawing figures

Generate Collection

L3: Entry 1 of 2 File: USPT Oct 2, 1990

US-PAT-NO: 4961134
DOCUMENT-IDENTIFIER: US 4961134 A

TITLE: Method for minimizing locking and reading in a segmented storage space

DATE-ISSUED: October 2, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Crus; Richard A.	San Jose	CA	N/A	N/A
Haderle; Donald J.	Los Gatos	CA	N/A	N/A
Teng; James Z.	San Jose	CA	N/A	N/A

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
International Business Machines Corporation	Armonk	NY	N/A	N/A	02

APPL-NO: 7/ 219514
DATE FILED: July 15, 1988

INT-CL: [5] G06F 12/00
US-CL-ISSUED: 364/200; 364/246, 364/246.3
US-CL-CURRENT: 707/8; 707/206, 711/209
FIELD-OF-SEARCH: 364/2MS, 364/9MS, 364/300

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4393500	July 1983	Imazeki et al.	364/900 X
☐	4627019	December 1986	Ng	364/900
☐	4716528	December 1987	Crus et al.	364/300
☐	4785400	November 1988	Kojima et al.	364/300

OTHER PUBLICATIONS

W. Chu, et al., "Fault Tolerant Locking for Tightly Coupled Systems", Proceedings of the 5th Symposium on Reliability in Distributed Software and Database Systems, IEEE Computing Society Press, copyright 1986, pp. 49-55.

ART-UNIT: 232
PRIMARY-EXAMINER: Zache; Raulfe B.
ATTY-AGENT-FIRM: Garnett; Pryor A.

ABSTRACT:

A page-accessing method in a segmented tablespace 10 which eliminates unnecessary reading and locking. The tablespace comprises data pages 18 grouped into identically-sized segments 16, each segment storing data for a single table. A status indicator 26 for each data page of a segment is kept in a separate segment control block 20 stored on a space map page 14. Five data page status indicator values are maintained:

(1) FULL (26a) - entirely full of current data;

(2) PARTIALLY FULL (26b) - partially full of current data;

(3) UNFORMATTED (26c) - empty; contains no data;

(4) MASS DELETE (26d) - contains only obsolete data because of an unqualified deletion (mass delete) of data; or

(5) QUALIFIED DELETE (26e) - contains only obsolete data because of a qualified deletion of data.

When scanning over the data in a segment, UNFORMATTED and MASS DELETE pages are skipped. QUALIFIED DELETE pages are locked, and then skipped if they still contain only obsolete data when the lock is obtained. When inserting data into pages, preliminary reads of UNFORMATTED and MASS DELETE pages are avoided. Data integrity is ensured by placing integrity checking bits at the beginning and end of each page. If the bits contain the same value, the page's data integrity is intact. If the bits are different, the page's previous consistent contents are recovered from the log records.

6 Claims, 3 Drawing figures

WEST

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Search Results -

Terms	Documents
5946698.pn.	2

Database: US Patents Full-Text Database
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Refine Search: 5946698.pn. Clear

Search History

Today's Date: 9/26/2001

DB Name	Query	Hit Count	Set Name
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5946698.pn.	2	L30
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5933838.pn.	2	L29
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5873091.pn.	3	L28
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5870763.pn.	3	L27
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5970488.pn.	2	L26
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5222235.pn.	3	L25
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5555404.pn.	3	L24
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5423037.pn.	3	L23
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5913219.pn.	3	L22
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5832484.pn.	3	L21
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5204958.pn.	2	L20
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5758345.pn.	3	L19
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5706489.pn.	3	L18
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	4868744.pn.	3	L17
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	6055546.pn.	2	L16
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5946700.pn.	2	L15
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	6038569.pn.	2	L14
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5991772.pn.	2	L13
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5822780.pn.	3	L12
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	6189010.pn.	2	L11
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5890167.pn.	3	L10
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	6115722.pn.	2	L9
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	6178427.pn.	2	L8
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5873102.pn.	3	L7
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5887274.pn.	3	L6
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5758357.pn.	3	L5
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	5517641.pn.	3	L4
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	4961134.pn.	2	L3
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	6119128.pn.	2	L2
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	6161109.pn.	2	L1

Generate Collection

L22: Entry 1 of 3 File: USPT Jun 15, 1999

US-PAT-NO: 5913219
DOCUMENT-IDENTIFIER: US 5913219 A

TITLE: Database recovery apparatus and method of using dual plane nonvolatile memory

DATE-ISSUED: June 15, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Baek; Young Sik	Taejon-Shi	N/A	N/A	KRX
Jin; Sung Il	Taejon-Shi	N/A	N/A	KRX
Kim; Yong Keol	Taejon-Shi	N/A	N/A	KRX

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Electronics and Telecommunications Research Institute	Daeieon	N/A	N/A	KRX	03

APPL-NO: 8/ 794933
DATE FILED: February 4, 1997

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
KR	96-3913	February 16, 1996

INT-CL: [6] G06F 17/30
US-CL-ISSUED: 707/202
US-CL-CURRENT: 707/202
FIELD-OF-SEARCH: 707/202, 707/204, 707/8

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5230075	July 1993	Premerlani et al.	N/A
☐	5317752	May 1994	Jewett et al.	395/182.12
☐	5715447	February 1998	Hayashi et al.	707/8

ART-UNIT: 271
PRIMARY-EXAMINER: Amsbury; Wayne
ASSISTANT-EXAMINER: Lewis; Cheryl
ATTY-AGENT-FIRM: Antonelli, Terry, Stout & Kraus, LLP

ABSTRACT:

There are effects that the page table does not have to be administrated since the process of backing up to a disc is not necessary, that the small unit lock is possible since the backup and recovery are performed in block units, that long copy time, which was one of the greatest disadvantages in performing the transaction, is negligible, so that all the burdens imposed on the transaction can be removed and, high speed transaction processing

burdens imposed on the transaction can be removed and, high speed transaction processing and recovery can be performed.

9 Claims, 9 Drawing figures